FACE INVESTIGATION

SUBJECT: Farmer Dies After he is Run Over by Tractor in Farmyard

SUMMARY: A 63-year-old male farmer (the victim) died after being run over by a tractor. He was working in the farmyard, next to a machine shed, while repairing a self-unloading forage wagon. He used the front-end loader on an International 656 tractor to lift the wagon for repair, then propped a board under the wagon to prevent its collapse. The tractor was turned off, but apparently left in third gear. After completing some repairs, he stood next to the tractor in front of the right rear tire, and turned the key to start the tractor so he could raise the bucket. The tractor lurched forward and ran over the victim. The victim's son had been working nearby in the barn and came to investigate when he heard the tractor engine running at a high speed. He found his father lying injured on the ground. Before he died, the victim briefly told his son how the incident had occurred. Emergency medical services were summoned and arrived within fifteen minutes. The victim was pronounced dead at the scene. The FACE investigator concluded that, to prevent similar occurrences, farm tractor operators should:

- **be seated in the operator's seat before starting a tractor**
- **place the transmission in neutral or park and follow the manufacturer's starting procedure**
- **keep the tractor's starting system in repair**

In addition, farmers and farm workers with functional limitations caused by illness or injury should**:**

- **seek and use the services of organizations and agencies that provide technical assistance and/or adaptive equipment to agricultural workers with disabling conditions.**

INTRODUCTION:

On September 3, 1995, a 63-year-old male farmer was run over by a tractor in the farmyard where he was repairing machinery. The Wisconsin FACE field investigator was notified by the Wisconsin Department of Industry, Labor & Human Relations, Workers Compensation Division, on November 6, 1995. On September 30, 1996, the field investigator visited the farm and met with the victim's wife. The FACE investigator also obtained the death certificate, the sheriff's and coroner's reports and the state climatologist's weather report of the day.

The site of the incident was a 300-acre dairy and crop farm purchased by the victim's son about four years before the incident. This dairy farm produced corn and hay to feed approximately 50 milking cows, and was the victim's home. Before moving to this farm, he owned and lived on a small farm operated by his wife and son. He received on-the-job training and experience while assisting with the operation of that farm, and from other agricultural industry jobs. He had worked for more than twenty years as a dairy co-op manager, then worked about a year at a feedmill. For the next four years, he traveled in the state selling agricultural field equipment until his health made it too difficult to continue traveling. He required crutches or canes to walk, and needed rest periods throughout the day to maintain his strength. The victim assisted with farm chores that did not require rapid, frequent or strong movement. He typically would spend his day doing repair and maintenance activities on the farm machinery or field work that did not require getting

on and off the tractor frequently.

INVESTIGATION:
The farm property consisted of a farmyard with farmhouse, equipment sheds and a barn, with crop and hay fields surrounding the farmyard. The gasoline-fueled tractor involved in the incident was purchased new about 25 years ago and was used by the family since then. It had a wide front axle, fluid filled back tires and was equipped with a front-end loader at the time of the incident. The operator mounting platform was about thirty inches from the ground, and the victim would typically grab the shifting levers to pull himself onto the platform from the left side of the tractor. The choke knob and clutch pedal were on the left side of the tractor, while the key and the hydraulic levers for the loader were on the right side. Usually, the tractor would not start without using the choke while the key was turned. However, the victim knew the tractor would often start without using the choke if the weather was warm. Safety switches that prevent the engine from starting when the transmission was in gear had been disconnected at an earlier, unknown time.

On the morning of the incident, the victim had operated the tractor from 6:30 A.M. until noon, discing the fields for fall seeding. He ate lunch with his wife and son, then slept for about an hour. Around 1:30 P.M. he began to repair the forage wagon. He was unable to crawl under the wagon to repair it and the farm did not have a hoist to lift it, so he used the tractor loader to lift the wagon. He worked on the wagon for several hours, using a chain wrapped around the wagon tongue and loader, and a board propped under the loader to prevent the bucket and wagon from inadvertently falling. The air temperature was about 75E F. with no precipitation.

At 5:00 P.M., the son went to the barn to begin evening chores, and noted his father was working on the wagon. The victim completed his work after that time, and was planning to raise the bucket to release the propped board so he could lower the wagon. To accomplish this, he stood in front of the right rear tractor tire so he could turn the key and operate the hydraulic lever without mounting the tractor. The tractor had been left in third gear, so when the key was turned it lurched forward and ran over the victim. It continued in a semicircular path, pushing the wagon ahead until it struck the wall of the machine shed and stopped moving. At 5:45, his son heard the tractor engine racing and left the barn to investigate. He found his father lying injured on the ground, with the tractor stationary and pushed against the shed. Before he died, the victim briefly told his son how the incident had occurred. Emergency medical services were summoned and arrived within fifteen minutes. The victim was pronounced dead at the scene.

CAUSE OF DEATH: The death certificate listed the cause of death as internal chest injuries and head injuries.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Farm tractor operators should be seated in the operator's seat before starting a tractor.
Discussion: Farm tractor starting systems are designed to be used while the operator is seated in the operator's seat. Starting methods that bypass this safety design, such as standing beside the tractor while

turning the key, or using a metal object to short across starter terminals will place the operator in the unsafe position in front of tractor tires. In this case, the farmer was standing in front of a rear tire while he turned the key. The incident would have been prevented if he had been sitting in the tractor seat.

Recommendation #2: Farm tractor operators should place the transmission in neutral or park and follow the manufacturer's starting procedure.

Discussion: When a tractor engine is started in gear, it may move suddenly and run over anything in its path. Placing the transmission in neutral or park provides time for the operator to assume control of the tractor before moving it forward or back. Tractor starting systems are designed to prevent starting the engine unless the transmission is in neutral or park. In this case, the safety switches had been disconnected so the victim was able to start the tractor while it was in third gear. This caused it to quickly lurch forward and run over him.

Note: The tractor involved in the incident has been replaced with a skid-steer loader equipped with an interlock system of seat bar, seatbelts and seat-activated controls.

Recommendation #3: Farm tractor owners/operators should keep the tractor's starting system in repair.

Discussion: The tractor in this case had been equipped with safety switches that prevented it from being started when the transmission was in gear. This safety feature has been deactivated prior to the incident. If the safety feature had been maintained, the tractor would not have started in a forward gear and the incident would have been prevented.

Recommendation #4: Farmers and farm workers with functional limitations caused by illness or injury should seek and use the services of organizations and agencies that provide technical assistance and/or adaptive equipment to agricultural workers with disabling conditions.

Discussion: Farm machines, including tractors, are designed and manufactured for use by individuals with full functional capacity. Physically disabling conditions, such as illness or injury, can impair a farm worker's ability to operate a machine safely when carrying out his or her work duties. Technical assistance in designing and fitting adaptive equipment is available from agricultural safety specialists, including agricultural engineers, state vocational rehabilitation counselors, agricultural equipment and supply manufacturers, and Extension programs that serve people with physical disabilities. This incident might have been prevented if the mounting platform of the tractor had been modified to be comfortably accessible to the victim.